



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,003	02/20/2002	Nahoko Takano	Q68521	4722
7590 12/13/2006 SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213			EXAMINER ELALLAM, AHMED	
			ART UNIT 2616	PAPER NUMBER

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/078,003

Applicant(s)

TAKANO ET AL.

Examiner

AHMED ELALLAM

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is responsive to Amendment filed on 09/15/2006. The Amendment has been entered.

1. The indicated allowability of claims 9-11 is withdrawn in view of the Amendment to the claims.

Claim Objections

2. Claim 7 is objected to because of the following informalities:

The end of claim 7 is missing a period ".".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 2, 7, 8, 13, 14, 19, 21, the meaning of the phrase "code word candidates that may be transmitted by the mobile station" is vague, because the term "may be" suggests or makes optional but does not require steps to be performed.

Regarding claims 9, 10, the meaning of the phrase “code word candidates which may be transmitted by the mobile station” is vague, because the term “may be” suggests or makes optional but does not require steps to be performed.

Regarding claim 13, in addition to the above the phrase “the base station control unit” lack antecedent basis.

Regarding claim 11, the phrase “the code words that are transmitted by said mobile station” lack antecedent basis. (Note: In accordance with the specification, reference to code words in plural form correspond to code words that are transmitted by the base station controller to the base station and not by the mobile station).

Regarding claim 19, the meaning of the duplicative assignment in phrase “duplicatively assigning a base station identifier to at least two of said base station” is confusing, because it is already stated that that codes words and base identifiers are unique information. Stated differently, an identifier cannot be unique and duplicative in the same time.

Regarding claim 20, the meaning of the phrases “the maximum number of the base stations which may have the radio links set up” and the code words which may be transmitted”, are vague, because the term “may be” suggests or makes optional but does not require steps to be performed.

Regarding claim 21, in addition to the above, the meaning of the phrases “determining the base station identifiers that may be used” and “the code words which may be used” are vague, because the term “may be” suggests or makes optional but does not require steps to be performed.

Regarding claim 22, the meaning of the phrase "said maximum base stations" is confusing because it lacks clear antecedent basis. Also, it is not clear to which base station is referred to in the phrase "judging whether or not the base station is specified as the transmitting base station", because of the already recited "plurality" of base stations. In addition, the phrase "the code word received from said mobile station" lack antecedent basis. Further the meaning of the phrase "code words which may be transmitted by said mobile station" is vague, because the term "may be" suggests or makes optional but does not require steps to be performed.

Regarding claim 23, the phrase "the code word received from said mobile station" lack antecedent basis. Also, the meaning of the phrases "base stations which may have the radio links set up" and "the code words which may be transmitted by the base station" are vague, because the term "may be" suggests or makes optional but does not require steps to be performed.

Regarding claims 3, 4, 15, 16, these claims have the limitation of "may set up", such limitation is vague because it suggests or makes optional but does not require steps to be performed.

It is equally important to note that the preambles of claims 8, 9, 10, 11, 12, 20, 21, 22, 23, and 24 requires the limitation "the base stations having radio link set up with the mobile station". However in the body of these claims reference is made to particular base stations, for example in claim 9, it is recited in the body of the claim "said base station control unit has first means for notifying each base station of the maximum base station number that is a maximum number of the base stations which may have the

Art Unit: 2616

radio links set up with said mobile station", this limitation is in contradiction with the preamble because the preamble implies that the links are already being set up, and to state "base stations which may have the radio links set up with said mobile station" would make no sense when the preamble is taken in the context of the claim as a whole. This is only one example. Similar remarks apply to claims 10, 11, 12, 20, 21, 22, 23, and 24 and any other remaining claim that the Examiner didn't address. Applicants are respectfully required to cooperate in presenting the claims in better form for Examination.

Regarding claims 5, 6, 17, 18, these claims depend from respective base claims 1, 13 thus they are subject to the same rejections.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art, specification page 3, line 15-page4, line 20. Hereinafter referred to as APA.

Regarding claims 9, 10, 11, 12, 20-24, the APA discloses the base stations transmit pilot signals at a predetermined power, and the mobile station measures the reception quality of the pilot signals transmitted by the base stations having the links set up, so that the base stations of high reception quality is determined as transmitting base stations and any station other than the transmitting base station stops at least some of the transmission. A base station control unit for controlling the base stations having the links set up determines base station identifiers of the plurality of base stations for having the links set up respectively when the mobile station starts the soft handover. Moreover, the above base station identifiers are base station unique information for identifying individual base stations. In the base station control unit, code words representing combinations of the base station identifiers are defined, and the base stations and the mobile station have such information. The mobile station transmits the code word representing the combination of the base station identifiers of the base stations determined as the transmitting base stations to the base stations having the links set up. The base station having the link set up judges which defined code words the received code word is, and judges from a table indicating correspondence between the code words and the base station identifiers whether the base station identifier of the base station is included. Consequently, the base station judges itself to be the transmitting base station, in the case where the base station identifier of the station is included. Then, the base station performs the transmission by the downlink. On the

other hand, in the case where the base station identifier of the base station is not included, the station stops the transmission. Thus, it is possible to have the transmission performed only by the base stations of little propagation loss, so that the interference with the downlink decreases and the link capacity is expected to increase.

The difference between claims 9, 10, 11, 12, 20-24 (as best understood) and the APA is that APA specify all the limitation of these claims except for: determination of the maximum base station number as in claims 9, 20-22; the assigning of the base station identifier in a predetermined order as in claims 10, 11 and 23; and duplicatively assigning the base station identifier that is already used as in claims 12 and 24.

As to claims 9, 20-22, Examiner take official notice that the determination of a maximum number of base stations used is well known in the art, such maximum number of base station is known in the CDMA prior art as the active set, since official action is taken, it would have been obvious to a person of skill in the art at the time the invention was made to determine the number of base stations that have the link set up with the mobile station of APA being the active set so that the judgment of the transmitting base stations of APA during handoff would be based on the actual links set up dictated by the active set. The advantage would be the handoff to the base station providing the strongest pilot signal of the active set in accordance with CDMA standard.

As to claims 12 and 24, Examiner takes official notice that assigning the same identifier (duplicate assignment) to at least two base stations is well known in the art, mainly when base station are remote from each other. Since official action is taken, It

would have been obvious to a person of skill in the art at the time the invention was made to assign duplicative base station identifiers in the APA system so long the base stations having the duplicate identifier are remote from each other. The advantage would be the ability to reduce implementation cost by having similar table entries and associated software/hardware in the base station table design. A person of skill in the art would be motivated to do so by recognizing the lack of interference between duplicate base station identifiers when they are remote from each other.

As to claims 10, 11 and 23, Examiner takes official notice that assigning of the base station identifiers in a predetermined order is well known in the art. Since official action is taken, it would have been obvious to a person of skill in the art at the time the invention was made to assign base station identifiers of APA base stations in a predetermined order so that code words representing combinations of the base station identifiers of the APA that are using the unique information can be searched in an orderly fashion during handoff. The advantage would be faster search for a handoff candidate base station by searching shorter code-words prior to longer code-words.

Response to Arguments

6. Applicant's arguments, see Remarks, filed 9/15/2006, with respect to Rule 37C.F.R 1.121 have been fully considered and are persuasive. The objection to the claims under 37C.F.R 1.121 has been withdrawn.

Applicants noted in the remarks filed on June 14, 2006 (under **Conclusion**) that "claims 9-11 and 21-23 have been rewritten in independent form incorporating all the

Art Unit: 2616

features of any base and intervening claims". Such conclusion is erroneous in that these claims as amended do not contain the feature of base claims and the intervening claims as shown in the record.

Conclusion

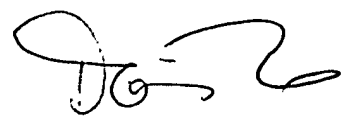
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: see Form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.E
Examiner
Art Unit 2668
12/10/06


DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600